PHYSICAL THERAPY PROTOCOL
FOR
ACUTE CARE ADULT HEMIPLEGIA

Developed by

The Committee for Physical Therapy Protocol
Office of Physical Therapy
Ministry of Health – Kuwait

In collaboration with

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ADULT HEMIPLEGIA

ACUTE PHYSICAL THERAPY CARE PROTOCOL

The protocol described here has been developed to bring more uniformity in the management of acute hemiplegic patients. It also aims at describing best practice to be carried out by all staff while patient are in acute care facility.

1- MANAGEMENT APPROACH

The approach we are using in this protocol is "task and context-related". According to Carr and Shepherd (1998), task- and context-related training means that :

"***The actions to be learned are practised in an appropriate environment, with exercises directed specifically at the muscles (and muscle synergies) required for the performance of that action".***

Our selection of approach is based on scientific evidence (Langhammer 2000, Richards 1999) which demonstrates that the task-and context-related approach is most effective in the management of stroke patients during the acute care. While using the repetition of activities that are task-specific, this approach is based on principles of neural plasticity, biomechanics and motor learning. It also promotes active subject participation and environmental modification (Richards and Malouin 1997).

2- DEFINITION

We consider the acute hemiplegic patient as having suffered a cardio-vascular accident CVA or a Stroke, either from an ischemic or an hemorrhagic pathological process. The acute stage is defined as being the period lasting from the time of the Stroke up to 6 weeks after onset of the problem.

3- TIMING FOR STARTING THERAPY

In case of an ischemic stroke, the best time to start therapy is determined by the observation of the status “medically stable” or more or less, 2 to 7 days after onset. As a member of the medical team, the physical therapist should be informed as soon as a new stroke patient is admitted, to request physician referral and begin to see the patient within 36 to 48 hours after admission. In case of other type of CVA, such as when caused by hemorrhage or in the presence of aneurism, other factors could also be considered in determining the start of P.T. management. Those include, physician decision for referral, C.T.Scan results and/or vital signs status.

4- GOALS OF PHYSICAL THERAPY INTERVENTION

If we keep in mind that our optimal goal should be to help patient be able to get out of bed as and be mobile as soon and as much as possible, the goals for our intervention should be agreed by the physical therapist, the patient and the care givers.

Patient and care givers education goals

1- Care giver will be able to participate to the overall physical therapy management.

2- Patient will be able to demonstrate an active learner attitude

4- Care giver and patient will be able to participate actively to the prevention of muscle shortening and shoulder complications.

Prevention goals

1- Patient is able to prevent loss of muscle and soft tissue length
2- Patient is able to prevent shoulder complications

General mobility goals

1- Patient is able to do effective bridging in bed
2- Patient is able to roll in bed and transfer from supine lying to sit on edge of bed
3- Patient is able to hold sitting and standing
4- Patient is able to reach in all directions and to the floor while in sitting and in standing
5- Patient is able to transfer from bed to chair and back
6- Patient is able to walk with or without assistive device and/or outside help

Limbs motor function goals

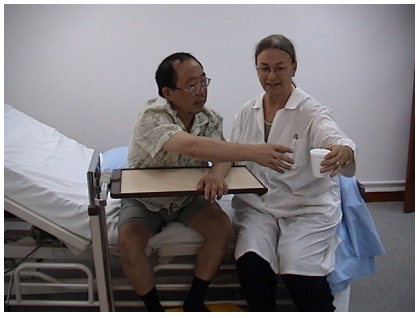
1- Patient is able to perform voluntary activities with the affected upper limb such as: in sitting with arms supported on a table: reaching forward, weight bearing on the affected hand, bring a glass to his mouth, pick and release object on a table, etc…
2- Patient is able to perform voluntary activities with the affected lower limb such as: using a bed or table for support in stancing, step up and down forward on a stool, step up and down sideways on a stool, sit-to-stand from different height and walks as often as possible.

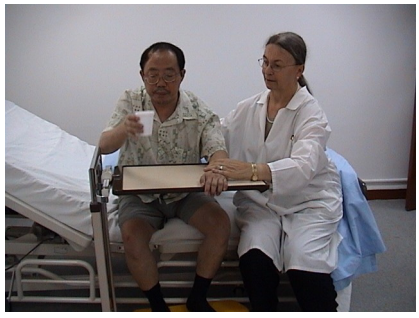
5- THERAPEUTIC ACTIVITIES

Supported sitting in bed with arms placed on a table or pillow

- Patient is asked to reach and use his sound upper limb in activities according to his interest.

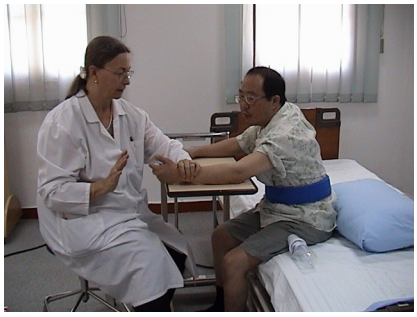
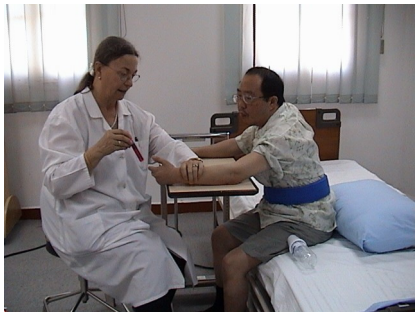
Assisted sitting on edge of bed, with arms supported on table and feet on floor or stool.

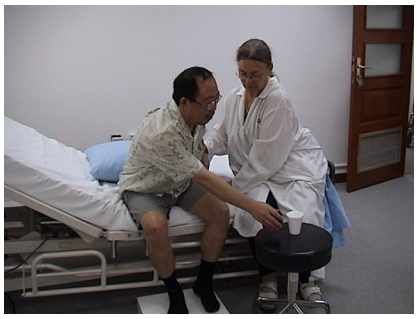
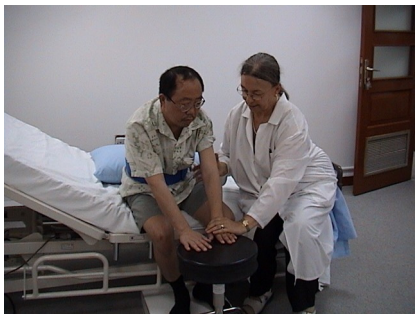




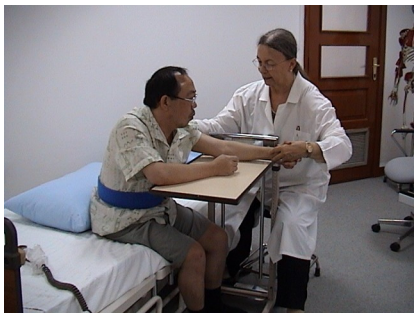
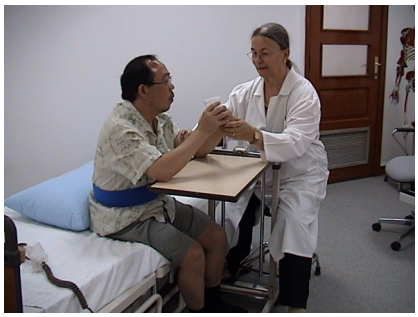
- Asked patient to do any activity with sound upper and lower limbs. Remember that while he perform tasks with his sound side, he also apply body weight on the affected side. Thus, stimulates activity in the affected side.

While patient is sitting on edge of bed

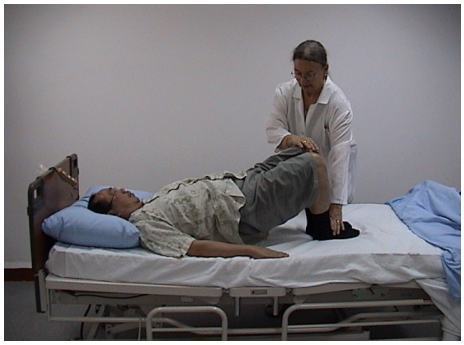



- Practice reaching and weight bearing activities with the affected side.

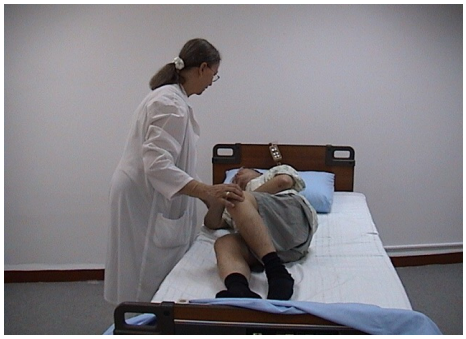



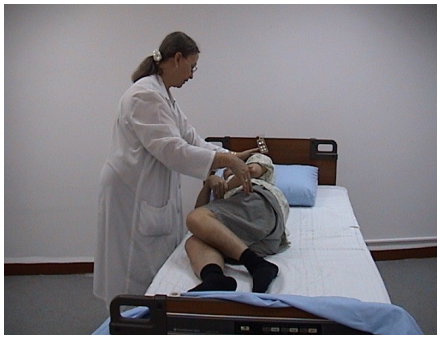
NB: These sitting activities are aimed at stimulating motor control in an upright position. Patient will be placed in the sitting position with as much help as needed. Remember that bed mobility activities are more demanding in energy and for this reason will be done after a few days of starting treatment.

5.3 Bed mobility activities:



- **bridging in bed**; stabilization of the lower limbs can be done on the ankle or around the knees.

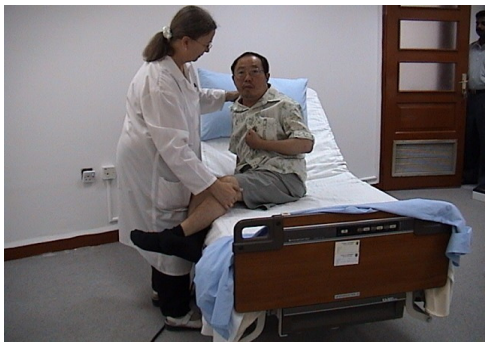




- **Rolling in bed** to the sound side. The affected arm can be placed across the chest and the affected knee flexed. The patient is asked to bring his head and affected shoulder towards the opposite side while pushing himself with the affected foot.

5.4 Progressive transfer from supine lying to sitting on the edge of bed.

- Start from a supported 80 to 90 degrees sitting position in bed and ask the patient to come and sit on his sound side edge of bed.



- Progressively bring the head of the bed down so that patient is trained to achieve lie to sit independently.

5.5 Progressive sit-to-stand

- Progress from a high to a low surface. Before attempting to stand, feet must be well positioned on the floor behind the knee and the head and shoulder well forward over the knees.

- Therapist positioned in front of patient or on his/her affected side, must use a walking belt around patient's waist and hold the patient by this belt, leaving free patient's upper limbs.

- Gradually when patient is able, the sitting surface will be gradually and progressively brought down until the normal height of a chair. Remember that patient must progressively learn to stand without your help. If you do not help him from the start, he will learn to do it alone. This is why you make him practice first, from a high surface, where it is easier.

5.6 Walking around the bed or a treatment table.

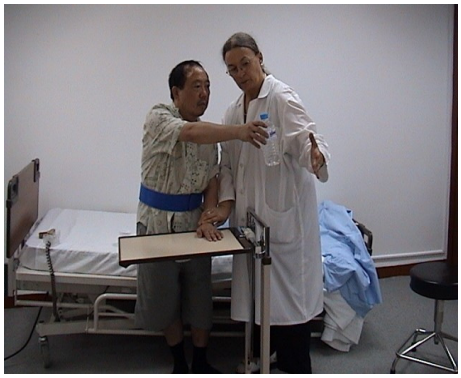
- With therapist standing behind or on patient's affected side, practice walking around the patient's bed which he may use for support with his/her sound hand He can practice walking forward, sideways and backward. Use only the walking belt to hold on patient. The less manual contact should be used so that patient can learn to walk on his own.

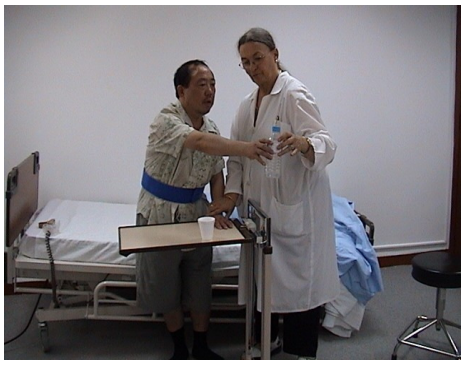
- It is not recommended to use parallel bars to train walking as the bars give too much passive support and patient end up developing overuse of the sound hand on the bar.

When patient is ready to walk away from the table or stable surface, try to make him practice walking without walking aid, first. If it is necessary, give the patient a simple straight stick to help walking. It is not recommended at this stage to use a quadripode as it tends to produce a completely abnormal gait pattern.

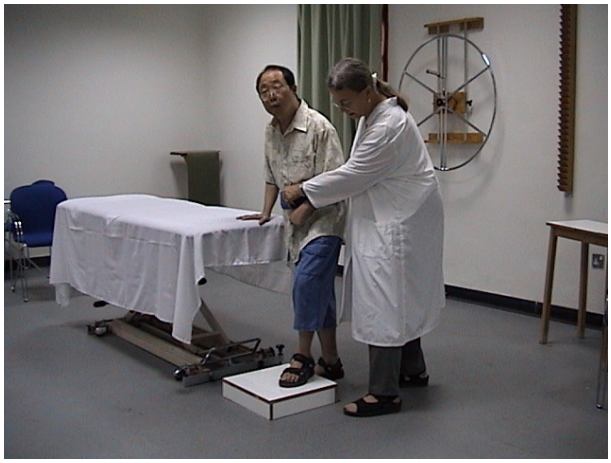
5.7 Activities in standing:

- **Reaching in standing**. Patient is positioned standing in front of a table and is asked to reach in all directions. While reaching with the sound hand, the affected hand is positioned in weight-bearing on table.





- With the sound hand supporting on the table or on the wall, patient is asked to step on a low stool (8cm). Progression may be done by asking the patient to do the stepping without support. Later a higher stool may be used.

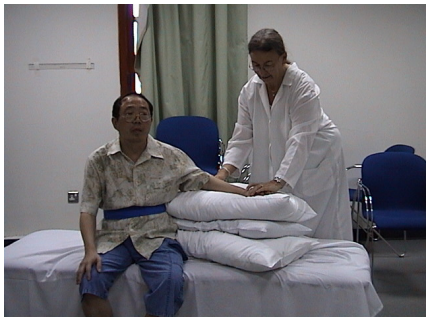


6- Prevention of stress, trauma and pain of the affected shoulder

- Use proper positioning of the upper limb while patient is in any given position.

- Avoid dangerous handling methods, especially while passive mobilization is performed and while helping patient to move in and out of position.

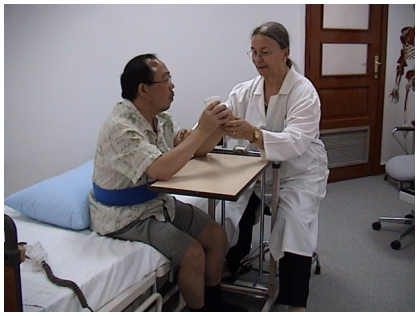
- Always support the arm when patient is sitting either in front or sideways on a high table.



- Use a belt to hold on patient, as it is preferable not to hold the affected upper limb. Never pull the affected arm

- Exercise the upper limb actively to gain as much as possible motor control. Practice specially reaching in lying and in sitting arm supported on a table and weight-bearing on an open hand, in sitting.

- Encourage patient to use his/her affected hand to assist the sound hand during functional activities



7- Discharge report

- Description of patient status in relation to the initial evaluation
- Include advices to care givers, assistive devices and degree of assistance needed for the patient

8- Home program

- Give oral and written information to patient and care givers on exercises, transfers and walking.
- If possible make a home visit or meet with the family to discuss home environment and patient's needs for assistive devices and assistance during daily living activities

9- Follow-up / Referral to other Department or Institution

- Obtain the necessary information to communicate with the patient for follow-up
- Participate to the coordination of referral to other services.

Physical Therapy Protocol Committee:-

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- Abdulla zmani (Al-Farwaniya Hospital)
- Necole refae (kuwait univirsity)
- Khadijah Al-Ramezi (Ibn Sina Hospital)
- Saud Mohammad (Al-Amiri Hospital)
- Noura Al-Jwear (Al-Farwaniya Hospital)